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IN THE

Supreme Court of the United States

STATE OF WISCONSIN, STATE OF MINNESOTA, STATE OF OHIO, and STATE OF PENNSYLVANIA, *Complainants,* *vs.* STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, *Defendants.* STATE OF MISSOURI, STATE OF KENTUCKY, STATE OF TENNESSEE, STATE OF LOUISIANA, STATE OF MISSISSIPPI, and STATE OF ARKANSAS, *Intervening Defendants.*	No. [redacted] Original.	4
STATE OF MICHIGAN, *Complainant,* *vs.* STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, et al., *Defendants.*	No. [redacted] Original.	5
STATE OF NEW YORK, *Complainant,* *vs.* STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, et al., *Defendants.*	[redacted] Original.	6

SEMI-ANNUAL REPORT OF THE SANITARY DISTRICT OF CHICAGO OF JULY 1, 1936, MADE PURSUANT TO DECREE OF APRIL 21, 1930.

FRED KLEIN CO., [redacted] 24 PRINTERS, CHICAGO.

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NOS. 5, 8 AND 9, ORIGINAL.

OCTOBER TERM, 1935.

STATE OF WISCONSIN, STATE OF MINNESOTA, STATE OF OHIO, and STATE OF PENNSYLVANIA, *Complainants,* vs. STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, *Defendants.* STATE OF MISSOURI, STATE OF KENTUCKY, STATE OF TENNESSEE, STATE OF LOUISIANA, STATE OF MISSISSIPPI, and STATE OF ARKANSAS, *Intervening Defendants.*	No. 5, Original.
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SEMI-ANNUAL REPORT OF THE SANITARY DISTRICT OF CHICAGO OF JULY 1, 1936, MADE PURSUANT TO DECREE OF APRIL 21, 1930.

Pursuant to provisions of paragraph numbered 5 of the Decree in the above entitled causes, entered on April 21, 1930, the Defendant, The Sanitary District of Chicago, hereby makes its semi-annual report of July 1, 1936, as follows:

CONSTRUCTION PROGRAM.

In the semi-annual report of January 1, 1936, the status of completed work in the sewage treatment construction program involved in this case was stated to be on December 1, 1935, as follows:

TABLE 1.

COMPLETED WORK AS OF DECEMBER 1, 1935.

Calumet Project	$ 26,479,408.59
North Side Project	37,140,868.18
West Side Project	51,158,410.62
Southwest Side Project	1,809,294.57
West-Southwest Treatment Plant	1,664,494.66
Miscellaneous Plants and Sewers	632,775.01
Chicago River Controlling Works	53,907.78
Total	$128,939,159.41

TABLE 2.

FUTURE WORK AFTER DECEMBER 1, 1935.

Calumet Project	$ 7,591,000.00
North Side Project	4,998,000.00
West Side Project	2,308,000.00
Southwest Side Project	36,957,000.00
West-Southwest Treatment Plant	26,614,000.00
Miscellaneous Plants and Sewers	1,950,000.00
Chicago River Controlling Works	3,000,000.00
Total	$83,418,000.00

During the six months between the date of the last report and the present report a considerable amount of construction work has been accomplished on the Calumet, the North Side, the West Side and the Southwest Side Sewage Treatment Projects and plans and specifications have been prepared for the major portion of the Chicago River Control Works.

Calumet Project. The following contracts, mentioned in the last semi-annual report, have been completed: Sludge Disposal Building and Miscellaneous Work; Sludge Disposal Equipment and

Piping; Electrical Equipment; and Underground Duct Lines. The Sludge Disposal Plant is therefore completed and was placed in service April 27, 1936. The Treatment Works Extension had been placed in operation December 3, 1935. The contract for roadways, grading, drainage, lighting, etc., is now approximately 80 per cent completed.

Contracts were awarded for the construction of the South Park Avenue Sewer January 3, 1936 and the Colfax Avenue Sewer March 23, 1936. The construction of the South Park Avenue Sewer is now 40 per cent completed and the Colfax Avenue Sewer about 10 per cent completed. Plans and specifications for the Calumet City Sewer are approximately 40 per cent completed.

Three other sewers in the Calumet area will still remain to be constructed whenever finances become available. These are the Blue Island Intercepting, the Evergreen Park and the California Avenue-Oak Forest Sewers.

North Side Project. Contracts were awarded for the construction of the Cherry Street, Winnetka, Sewer January 3, 1936 and for Additional Final Settling Tanks, etc., at the North Side Treatment Works May 7, 1936. The construction of the Cherry Street Sewer is now about 30 per cent completed.

West Side Project. All the contracts on the main West Side Intercepting Sewer, namely, Contracts 1 to 10, have been completed and this sewer has all been placed in service. On the collateral intercepting sewers, plans are 50 per cent completed for the Goose Island Sewer and 30 per cent completed for

the Halsted Street Sewer. Plans and specifications have been completed for the Harrison to Taylor Street Sewer, but difficulty in acquiring right-of-way is still delaying the taking of bids for this work.

The remaining work in the West Side Project, dependent upon future financing, consists of certain collateral sewers and sewer connections in the area adjacent to the Main Drainage Channel west of Western Avenue and of facilities for the secondary (or complete) treatment of sewage at the West Side Works.

Southwest Side Project. Construction was continued on the following contracts for the Southwest Side Intercepting Sewer, mentioned in the last semi-annual report to the Court: Contract Section 1, now 60 per cent completed; Contract Section 2, now 100 per cent completed; Contract Section 3, now 95 per cent completed; and Contract Section 4, now 65 per cent completed. The contract for the construction of Section 5 was awarded January 30, 1936 and the work is now about 3 per cent completed. Plans have been completed for Contract 6, but difficulty in securing right-of-way is delaying the taking of bids for this work. Considerable progress has been made on plans for connections and for collateral work for the Southwest Side Intercepting Sewer.

Construction was started December 30, 1935 on Contract Sections 3, 5, and 6 of the Upper Des Plaines Intercepting Sewer. Work on Contract Section 3 is now 25 per cent completed; Contract Section 5 is now 30 per cent completed and Contract Section 6 is 75 per cent completed. A contract for Section 1 of this sewer was awarded March 12, 1936 and for Section 2

April 16, 1936. Plans are being prepared for the small pumping station and for the connections to the Upper Des Plaines Intercepting Sewer.

Contracts were awarded for the construction of Section 2 of the West Towns Outlet Sewer February 20, 1936 and for Section 1 May 21, 1936. Plans are being prepared for the connections to this sewer and for the Outfall into the Main Drainage Channel. Plans for the Argo Sewer are approximately 60 per cent completed.

West-Southwest Treatment Plant. Construction was continued on the following contracts mentioned in the last semi-annual report to the Court: Aeration Tanks, Operating Galleries, Final Settling Tanks, etc., now 55 per cent completed; Electrical Work in connection with Aeration Tanks, etc., now 12 per cent completed; Substructure of Pump and Blower House, now 100 per cent completed; and Structural Steel Work of Pump and Blower House, now 100 per cent completed. The fabrication of the following equipment was continued: Steam Turbine driven Pumping Units, now 86 per cent completed; Steam Turbine driven Blower Units, now 91 per cent completed; Sludge Removal Mechanisms, now 53 per cent completed; Venturi Meters, now 90 per cent completed; and Large Valves, now 93 per cent completed.

A contract for the Architectural Work of the Pumping Station and Blower House was awarded February 27, 1936 and for the Electrical Work in this structure March 12, 1936. Contracts were let for Main Influent and Effluent Conduits, etc., for Meters and for Valves and Sluice Gates in connection with

said conduits March 5, 1936. Bids were received June 25, 1936 for the construction of the Pump Discharge Chamber and Plant Outfall.

Contracts were awarded for furnishing Steam Turbine driven Generator Units, for Condensers and for Transformers March 5, 1936; for furnishing Boiler Feed Water Heaters March 26, 1936; for furnishing Boilers and Settings and for Heat Exchangers April 2, 1936; and for furnishing Diffuser Plates May 21, 1936.

At the present time 55 per cent of the 400 MGD West-Southwest Sewage Treatment Plant has been placed under contract and 21 per cent of the total plant completed.

Control Works, Chicago River. As stated in the last semi-annual report to the Court, an application for the construction of Control Works for the Chicago River was filed with the War Department October 10, 1935 and a public hearing thereon held November 15, 1935. After extended negotiations with all parties interested and the submission of a modified plan February 8, 1936, a permit was granted by the War Department March 12, 1936 for the construction in Chicago Harbor of a navigation lock, connected to the shore by certain walls in which control gates are located.

Detail plans of the Lock and Guide Walls, comprising approximately 75 per cent of the entire Control Works project, were submitted to the War Department May 7, 1936 and approved June 2, 1936. Under a contract, awarded May 21, 1936, Test Piles were driven on the site of the Lock and Guide Walls,

this work being completed May 29, 1936. Bids for the construction of this lock, guide walls, etc., were received June 30, 1936.

Financial. The financial condition of The Sanitary District of Chicago has improved somewhat since the time of the last semi-annual report to the Court. The local tax situation has improved slightly. The amounts of taxes extended for the Sanitary District for the years 1928 to 1934, inclusive, and the amounts collected up to May 14, 1936, pursuant to these extensions, are as follows:

	Total Taxes Extended	Amount Collected	Amount Unpaid	Percentage Unpaid
1928.....	$ 19,448,392.46	$ 17,417,527.84	$ 2,030,864.62	10.44
1929.....	24,466,998.58	20,486,248.03	4,000,750.55	16.35
1930.....	22,453,699.40	17,439,364.32	5,014,335.08	22.33
1931.....	20,517,561.90	15,525,014.78	4,992,547.12	24.33
1932.....	19,281,643.24	13,314,063.42	5,967,579.82	30.95
1933.....	18,037,167.48	12,412,680.85	5,624,486.63	31.18
1934.....	21,163,009.22	13,354,237.36	7,808,771.86	36.90
	$145,368,472.28	$109,929,136.60	$35,439,335.68	24.38

The amount, $109,929,136.60, shown in the foregoing table, is the amount of Sanitary District taxes collected by the County Collector. Of this amount, $106,216,433.45 has been turned over to the Sanitary District.

The taxes collected since the time of the last report to the Court amount to $7,259,301.13, which is about 5.0 per cent of the taxes levied and due. This money was used to redeem tax anticipation warrants, to pay current expenses and to pay defaulted interest and principal of bonds. The non-payment of these

taxes to the extents indicated above forced the Sanitary District, through lack of revenue, to default on more than $20,000,000 of maturing principal on bonds used for construction work due from January 1, 1932 to December 31, 1935. This condition has been corrected by the refunding of the bonds of the Sanitary District.

Refunding of Bonds. The refunding of bonds, mentioned in the last semi-annual report to the Court, has been successfully accomplished and as a result the Sanitary District is no longer in default for payment of principal or interest on bonds, except a comparatively small amount of bonds not yet exchanged. Through the cooperation of the bond holders, the outstanding bonds in the amount of $139,259,890 were refunded up to June 1, 1936, leaving only $686,000 of the old bonds outstanding. The bonds refunded amount to 99.5 per cent of all the bonds of the Sanitary District outstanding.

The refunding plan provided for the issuance of new bonds to the holders of bonds maturing January 1, 1936, and thereafter, amounting to $119,227,000. These new bonds are due January 1, 1955, bear the same rate of interest as the old bonds but are subject to redemption on January 1st of the year after the year in which the old bonds for which they were exchanged were due to mature, or on any interest date thereafter. Bonds which were in default or matured prior to January 1, 1936, amounting to $20,718,890, were paid in cash. This cash payment of principal was made possible through the sale above par of new bonds in that amount. The payment of all defaulted interest was also arranged. The two

amounts of $119,227,000 and $20,718,890 make up the total of $139,945,890 of Sanitary District bonds outstanding.

Sale of Canals. As stated in the last report to the Court, The Sanitary District of Chicago initiated steps to bring about the purchase by the Federal Government of the waterway improvements applicable to navigation in the South Branch of the Chicago River, the Little Calumet River, the Main Channel and the Calumet-Sag Channel. A public hearing on this matter was held before the United States District Engineer in Chicago December 19, 1934 and January 15, 1935. On August 15, 1935 the United States Division Engineer, Upper Mississippi Valley Division, issued a notice of unfavorable report with respect to this matter. The Sanitary District thereupon appealed to the Board of Engineers for Rivers and Harbors and at a hearing before this Board, December 17, 1935, filed additional information and made additional arguments in favor of the proposed sale. The Board of Engineers for Rivers and Harbors reported December 19, 1935 that the purchase of these canals by the government was not advisable and the Chief of Engineers, on January 13, 1936, concurred in the views and recommendations of the Board.

Progress of Work. The total work accomplished by The Sanitary District of Chicago in the construction of sewage treatment works during the period from December 1, 1935 (the date of the summaries for the last report) to June 1, 1936 (the date of the summaries for this report) as measured by construction expenditures was, as follows:

TABLE 3.

Calumet Project	$1,064,034.60
North Side Project	63,426.20
West Side Project	713,832.06
Southwest Side Project	3,739,399.42
West-Southwest Treatment Project	1,157,770.25
Miscellaneous Plants and Sewers	186.19
Chicago River Controlling Works	30,508.59
Total	$6,769,157.31

In addition to the amounts shown in Table 3, approximately $1,320,000 had been earned by contractors up to June 1, 1936, on the various items of construction work, but had not been paid, being retained by the Sanitary District as reserved percentage until the final completion of the contracts.

By adding the various items indicated in Table 3 to corresponding items in Table 1, the completed portion of the sewage treatment construction program on June 1, 1936, was as follows:

TABLE 4.
COMPLETED WORK AS OF JUNE 1, 1936.

Calumet Project	$ 27,543,443.19
North Side Project	37,204,294.38
West Side Project	51,372,242.68
Southwest Side Project	5,548,693.99
West-Southwest Treatment Plant	2,822,264.91
Miscellaneous Plants and Sewers	632,961.20
Chicago River Controlling Works	84,416.37
Total	$125,708,316.72

The estimated cost of future sewage treatment construction, as of June 1, 1936, is as follows:

TABLE 5.
FUTURE WORK AFTER JUNE 1, 1936.

Calumet Project	$ 7,561,000.00
North Side Project	5,027,000.00
West Side Project	1,742,000.00
Southwest Side Project	33,074,000.00
West-Southwest Treatment Plant	23,964,000.00
Miscellaneous Plants and Sewers	1,950,000.00
Chicago River Controlling Works	2,830,000.00
Total	$76,148,000.00

Funds remaining unexpended from the amounts obtained under the agreement of September 21, 1935 with the Federal Emergency Administration of Public Works are definitely allocated to projects in this future work, estimated to cost $31,708,000. Approximately $3,500,000 of funds obtained from the PWA are not now definitely allocated, but may be used for some of this future work. This leaves work estimated at $40,940,000 to be financed from other sources.

SEWAGE TREATMENT.

The population of The Sanitary District of Chicago, as of July 1, 1936, is about 4,449,000, according to estimates made from the figures of the 1930 census. The industrial wastes in the Sanitary District are assumed to be equivalent to the sewage of 1,791,000 additional persons. Hence, the total population and industrial wastes equivalent amount to 6,240,000. This figure includes the Corn Products wastes, which would have been equivalent to the sewage of 401,000 persons if no recovery had been accomplished. These wastes have been greatly reduced, as a result of certain experimental work initiated by the Sanitary District.

The 1936 total population, and industrial waste equivalent, as above indicated, are estimated as 6,240,000. Up to date, the Sanitary District has assumed that so-called complete sewage treatment could produce an annual average of 85 per cent purification. Hence, so-called complete treatment for the total July 1, 1936, population and industrial

wastes equivalent would equal the 100 per cent treatment of the sewage of 5,304,000, which is 85 per cent of 6,240,000.

The expenditures for sewage treatment have been indicated in Tables 1, 3, and 4. The amounts of actual sewage treatment in operation on December 24, 1935 (as of the time of the last report to the Supreme Court) and at the present time are shown in Tables 6 and 7, following:

TABLE 6.

ACTUAL SEWAGE TREATMENT IN OPERATION AS OF DECEMBER 24, 1935.

Treatment Works	Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis
Calumet	279,000	85	237,000
North Side	1,184,000	85	1,006,000
West Side (Sedimentation)	890,000	33⅓	297,000
Miscellaneous (Morton Grove, Glenview, Northbrook)	7,000	85	6,000
Corn Products (Reduction)	385,000		331,000
Total	2,745,000		1,877,000

TABLE 7.

ACTUAL SEWAGE TREATMENT IN OPERATION AS OF JUNE 25, 1936.

Treatment Works	Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis
Calumet	284,000	85	241,000
North Side	1,211,000	85	1,029,000
West Side (Sedimentation)	1,602,000	33⅓	534,000
Miscellaneous (Morton Grove, Glenview, Northbrook)	8,000	85	7,000
Corn Products (Reduction)	401,000		364,000
Total	3,506,000		2,175,000

The extent of the operation of sewage treatment plants at the present time is equal to the 100 per cent treatment of the sewage of 2,175,000 out of

5,304,000 persons, which would be the present possible 100 per cent treatment if the sewage of the total population and industrial wastes equivalent of 6,240,000 were being treated. This indicates the actual treatment of approximately 41.0 per cent of the total sewage within the Sanitary District. although considerable additional construction work has been performed during this period, for which no credit will be taken in this percentage until the works are completed and put in operation.

DIVERSION OF WATER.

The net diversion of water from Lake Michigan, during the calendar year 1935, averaged 6,484 cubic feet per second. The domestic pumpage of the Chicago metropolitan area during this period averaged 1,602 cubic feet per second; the inflow from the DesPlaines River averaged 7 cubic feet per second; and the total flow from the Main Channel at Lockport averaged 8,093 cubic feet per second.

Diversion of water from Lake Michigan by The Sanitary District of Chicago since July 1, 1930, has been made in accordance with a Permit from the Secretary of War, dated June 26, 1930, which authorized the diversion of water as specified in the Decree of the Supreme Court, handed down April 21, 1930. This limited the net diversion to an annual average of not more than 6,500 cubic feet per second up to December 31, 1935, and thereafter limits the net diversion to an annual average of not more than 5,000 cubic feet per second up to December 31, 1938. The average monthly diversion, as

made under this Permit from January 1 to June 20, 1936, is indicated in the table following:

Month 1936	Total Flow From Main Channel At Lockport C.F.S.	Inflow From DesPlaines River C.F.S.	Domestic Pumpage Chicago Metropolitan Area C.F.S.	Net Diversion From Lake Michigan C.F.S.
January	6256	0	1593	4663
February ...	6670	73	1798	4799
March	6654	28	1704	4922
April	6826	0	1624	5202
May	7593	0	1661	5932
June 1 to 20..	6753	0	1700	5053
Average ...	6792	17	1680	5095

The diversion of water from Lake Michigan has been reduced to an annual average of not more than 5,000 cubic feet per second on and after December 31, 1935.

All of which is respectfully submitted,

THE SANITARY DISTRICT OF CHICAGO,

By ROSS A. WOODHULL,
President.

WILLIAM H. TRINKAUS,
Acting Chief Engineer.

ERNST BUEHLER,
Attorney.

Attest:

JAMES J. SULLIVAN,
Clerk.